

INTERNATIONAL SEARCH REPORT

Inter al Application No

PCT/US 02/21296

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07D451/04 C07D451/14 A61K31/55 A61K31/46

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07D A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, CHEM ABS Data, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,Y	WO 99 32117 A (SIBIA NEUROSCIENCES INC ;VERNIER JEAN MICHEL (US); MC DONALD IAN A) 1 July 1999 (1999-07-01) cited in the application page 4, line 13 -page 5, line 18; claim 1 ----	1-71
Y	WO 97 19059 A (SIBIA NEUROSCIENCES INC ;VERNIER JEAN MICHEL (US); MCDONALD IAN A) 29 May 1997 (1997-05-29) cited in the application page 2, line 15 -page 3, line 16; claim 1 ----	1-71
X	WO 96 37226 A (MENNITI FRANK S ;PFIZER (US); CHENARD BERTRAND L (US)) 28 November 1996 (1996-11-28) preparations 36,38, 39 and 41 ----- -/-	1



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

G document member of the same patent family

Date of the actual completion of the international search

31 October 2002

Date of mailing of the international search report

21/11/2002

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 01 19817 A (ABBOTT LAB) 22 March 2001 (2001-03-22) claim 1 ---	1-71
Y	WO 00 44755 A (ABBOTT LAB) 3 August 2000 (2000-08-03) claim 1 ---	1-71
Y	ELLIOT R L ET AL: "2-(ARYLOXYMETHYL) AZACYCLIC ANALOGUES AS NOVEL NICOTINIC ACETYLCHOLINE RECEPTOR (NACHR) LIGANDS" BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, OXFORD, GB, vol. 6, no. 19, 1996, pages 2283-2288, XP000618280 ISSN: 0960-894X table 1 ---	1-71
A	RADL, STANISLAV ET AL: "Synthesis and analgesic activity of some side-chain modified anpirtoline derivatives" ARCHIV DER PHARMAZIE (WEINHEIM, GERMANY) (2000), 333(5), 107-112 , XP002219143 compounds of formula 4a and 4b ---	1
A	KRAISS, G. ET AL: "Stereospecific methods of forming ethers by nucleophilic reactions of 3.alpha.-substituted tropanes" J. ORG. CHEM. (1968), 33(6), 2601-3 , XP002219144 experimental section "tropane-3-phenyl thioether" -----	1

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-71 (all part)

subject-matter related to monocyclic aromatic compounds

2. Claims: 1-71 (all part)

subject-matter related to bicyclic compounds of formulae (Ia) and (Ib)

The present subject-matter relates to compounds comprising an aza-bicyclic portion and an aromatic portion linked via an optionally oxidized sulphur atom that modulate neurotransmission by promoting the release of neurotransmitters such as acetylcholine.

However, document WO-A-9932117 already discloses compounds falling within the present scope having the same pharmacological activity comprising a monocyclic heteroaromatic part.

Furthermore, document WO-A-9719059 discloses in table II a neurotransmitter releasing compound comprising a monocyclic aromatic part.

The Applicant introduced therefore a proviso in claim 1 which excludes some subject-matter of the said prior art.

However, since the disclaimed compounds have the same pharmacological activity, the remaining scope of the claims does not contain a special technical feature which defines a contribution over the prior art.

Consequently, there is no technical relationship among the claimed compounds apparent representing a single inventive concept.

The subject-matter of the present international application can therefore be divided in at least two groups of inventions mentioned above.

However, in view of the disclosure of documents WO-A-9719059 and WO-A-9932177, the first group of inventions (compounds comprising a monocyclic aromatic portion) represents itself multiple groups of inventions inter alia dependent on the nature of substituent R2.

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Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
Although claims 69 and 71 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

Inte Application No
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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9932117	A	01-07-1999	AU 748991 B2	13-06-2002
			AU 1943799 A	12-07-1999
			CA 2315941 A1	01-07-1999
			EP 1043999 A1	18-10-2000
			JP 2001526226 T	18-12-2001
			WO 9932117 A1	01-07-1999
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			AU 1078297 A	11-06-1997
			CA 2237752 A1	29-05-1997
			EP 0874818 A1	04-11-1998
			JP 2000501080 T	02-02-2000
			WO 9719059 A1	29-05-1997
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			BR 0007664 A	07-05-2002
			CN 1345320 T	17-04-2002
			CZ 20012716 A3	14-11-2001
			EP 1147112 A1	24-10-2001
			HU 0200332 A2	29-06-2002
			NO 20013731 A	18-09-2001
			SK 10692001 A3	07-01-2002
			TR 200102162 T2	21-12-2001
			WO 0044755 A1	03-08-2000